REMARKS

Claims 1-10 are pending.

Claims 1-10 stand rejected.

Claims 1-10 are amended.

No new matter has been added.

Claims 1-10 are hereby submitted for reconsideration.

In the Office Action, the Examiner has objected to the drawings because claims 2 and 4 include input and output fiber not shown in the drawings as well as selection and conversion of wavelengths also not shown in the drawings.

Regarding the illustration of the claimed subject matter of selecting specific wavelengths and conversion of the specific wavelengths, this element of the independent claims is shown in Fig. 4, where exemplary wavelengths 1 and 2 are converted into wavelengths 3 and 4 respectively in node C. Figure 4 is generic to all of the claims and to all of the species identified by the Examiner in the earlier election requirement. Furthermore, wavelength conversion is again shown in Fig. 6 related to the elected subspecies selected by Applicants in the previous Amendment.

Regarding the terms input and output fibers, Applicants begin by noting that claims 2 and 4 do not contain such elements. However, these elements do appear in claims 5 and 6. As such, Applicants are treating this objection as if it were based on those claims. In response, Applicants have removed the terms input and output fibers from claims 5 and 6.

On a separate note, Figs. 1-3 refer to prior art and are identified as such in the

specification. Applicants have hereby amended Figs. 1-3 accordingly to include such a notation.

In view of this, Applicants submit the Figures are acceptable and respectfully request that the objection to the figure be withdrawn.

Turning to the substantive rejections, in the Office Action, the Examiner has rejected claims 1-10 under 35 U.S.C. § 102(e) as being anticipated by Liu (U.S. Patent No. 6,519,060). Applicants respectfully disagree with the Examiner and submit the following remarks in response.

The present invention as claimed in claim 1 is directed to an optical multiplex transmission method. The method includes the steps of transmitting an optical signal group across a plurality of nodes in network. For each of the nodes in the network, a multiplexed optical signal group is accepted from a first optical transmission line. The optical sign group has a plurality of optical wavelength signals.

At least one of the optical wavelength signals included in the optical signal group is converted into a wavelength-converted optical wavelength signal having an arbitrary wavelength respectively.

At least one of the wavelength-converted ~~of the~~ optical wavelength signals is multiplexed with at least one other of the optical wavelength signals included in the optical signal group where the wavelength-converted optical wavelength signal is not multiplexed with the optical wavelength signal from which the wavelength-converted optical wavelength signal was originally converted. The resulting multiplexed optical wavelength signals is outputted to a second transmission line.

In this arrangement, the present invention is configured to provide a means for increasing throughput on an optical transmission network. This is achieved by allowing *at each node* the input wavelength of a given signal from a first group of optical signals to be converted to a *second arbitrary wavelength different from the initial input wavelength* for multiplexing the signal to a second node on the network. This new converted wavelength selected for the converted signal may be selected arbitrarily from any of the available output channel wavelengths available for that node.

Such a conversion process is available at any one of the nodes in a network, as claimed in independent claims 1-6. Furthermore, such a conversion to an arbitrary wavelength different from the input wavelength is also recited in independent claims 1 through 6.

An additional feature as claimed in claims 1 and 3, is that the wavelength converted optical wavelength signal is multiplexed for output to a second node, with at least another optical wavelength signal from the incoming optical signal group. But the wavelength converted optical wavelength signal *is not* multiplexed with the optical wavelength signal from which the wavelength converted optical wavelength signal was originally converted from.

Turning to the cited prior art, the Liu reference teaches a means for optical transmission of signals through nodes. The main focus of the invention is to increase transmission speed by dedicating half of the network throughput to express lanes. These express lanes are used to allow signals that are simply passing through a particular pass through node to a next destination node to skip the add-drop sequence in the pass through node, thereby speeding their transmission.

As such, a number of output wavelengths are pre-designated for each node to be express lanes. The add-drop switches of Liu thus can not arbitrarily select to convert an incoming optical wavelength signal into a different output wavelength because it is restricted to output wavelengths not already in use by the express lanes.

Furthermore, the Examiner has cited to Fig. 8 is support of the rejection, reciting the add/drop switch with wavelength conversion abilities. However, Fig. 8 refers to an add/drop unit 1102 for *cross connect* drop. Column 12, lines 17-26 of the Liu reference state:

> "As shown in FIG. 12 *a cross-connected node*, such as node D in FIG. 10, can facilitate empty slots being filled via wavelength slot interchange. For example, train 4000 has empty slots 4001, 4002. *These may be filled via an add/drop switch with wavelength conversion as shown in FIG. 8*. In other words, a signal can have its wavelength changed, and be added into an empty slot. Also the wavelength cross-connect switch shown in FIG. 9 can be used to move a signal with the same wavelength from a different train in the empty slot." (emphasis added)

Thus, from this description Fig. 8 refers to a cross connect switch between two networks such as node D in Fig. 10, and refers to simply converting wavelengths as necessary between different network rings. Rather, the present invention claims a system and method in which at every node in a network, an incoming optical wavelength signal can be converted to a different arbitrary wavelength for output to the next node in the same network.

As such, the cited Liu reference does not teach or suggest all of the elements as claimed in the independent claims. For example, there is no teaching or suggestion in Liu for a transmitting an optical signal group across a plurality of nodes in network and *for each of the nodes in said network, converting at least one of the optical wavelength*

signals included in the optical signal group, into a wavelength-converted optical wavelength signal.

Likewise, there is no teaching or suggestion in Liu that discloses a converting at least one of the optical wavelength signals included in the optical signal group, into a wavelength-converted optical wavelength signal, *having an arbitrary wavelength respectively.*

For at least these reasons, Applicants submit the cited prior art does not teach or suggest all of the elements as claimed in the present invention in independent claims 1-6 and respectfully request that the rejection of these claims be withdrawn. Likewise, as claims 7-10 are dependent from claims 3 and 7 for at least the same reasons, the rejection of these claims should also be withdrawn.

Applicants respectfully submit that the present invention as claimed in claims 1-10 is now in condition for allowance, the earliest possible notice of which is earnestly solicited. If the Examiner feels that a telephone interview would advance the prosecution of this application he is invited to contact the undersigned at the number listed below.

Respectfully submitted

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Dated: 5/9/05 By: _____

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Amendments to the Drawings:

The attached sheets of drawings include changes to Figs. 1-3.

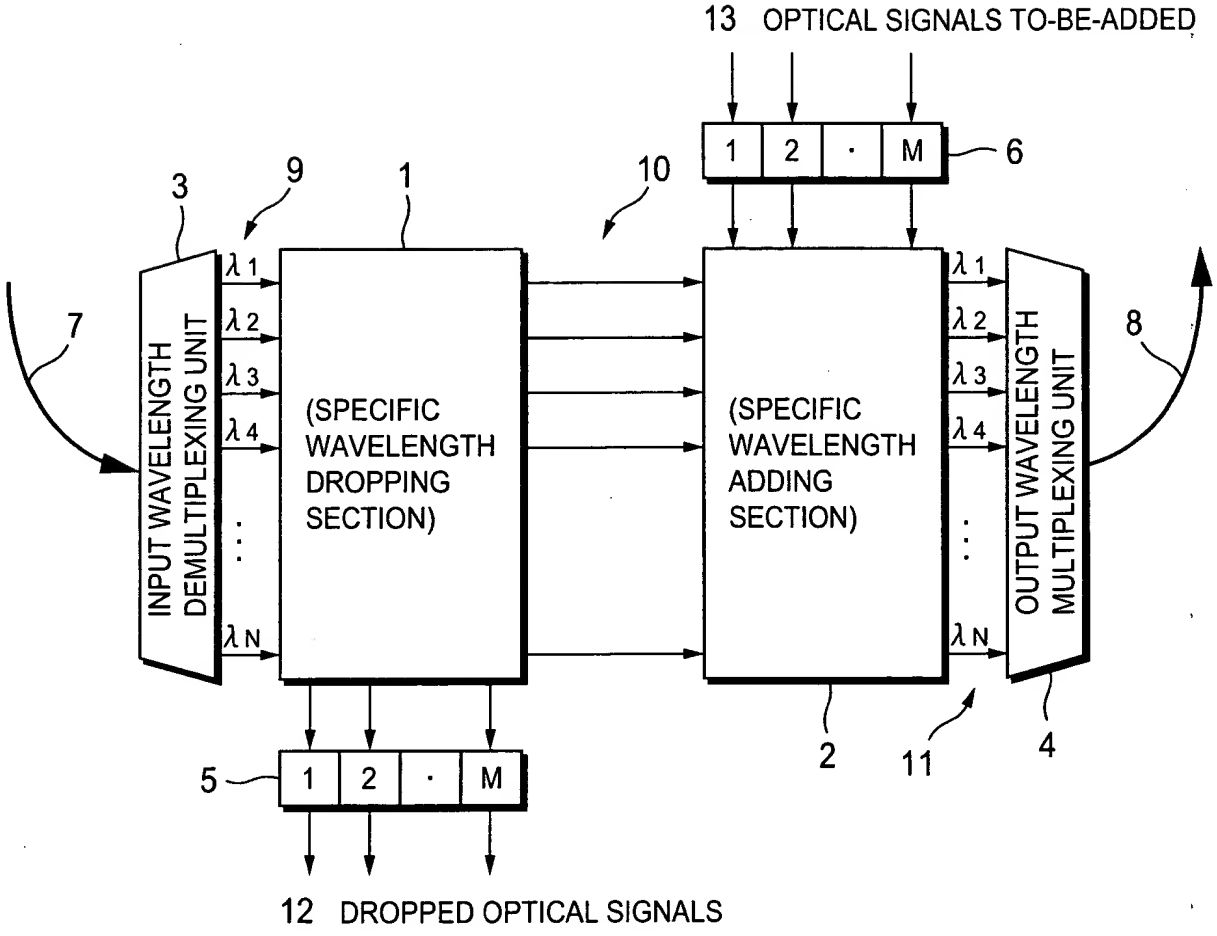
Sheet 1, which includes Fig. 1, replaces the original; sheet 1 including Fig. 1. In Fig. 1 the term "Prior Art" has been added.

Sheet 2, which includes Fig. 2, replaces the original; sheet 2 including Fig. 2. In Fig. 2 the term "Prior Art" has been added.

Sheet 3, which includes Figs. 3 and 4, replaces the original; sheet 3 including Figs. 3 and 4. In Fig. 3 the term "Prior Art" has been added.

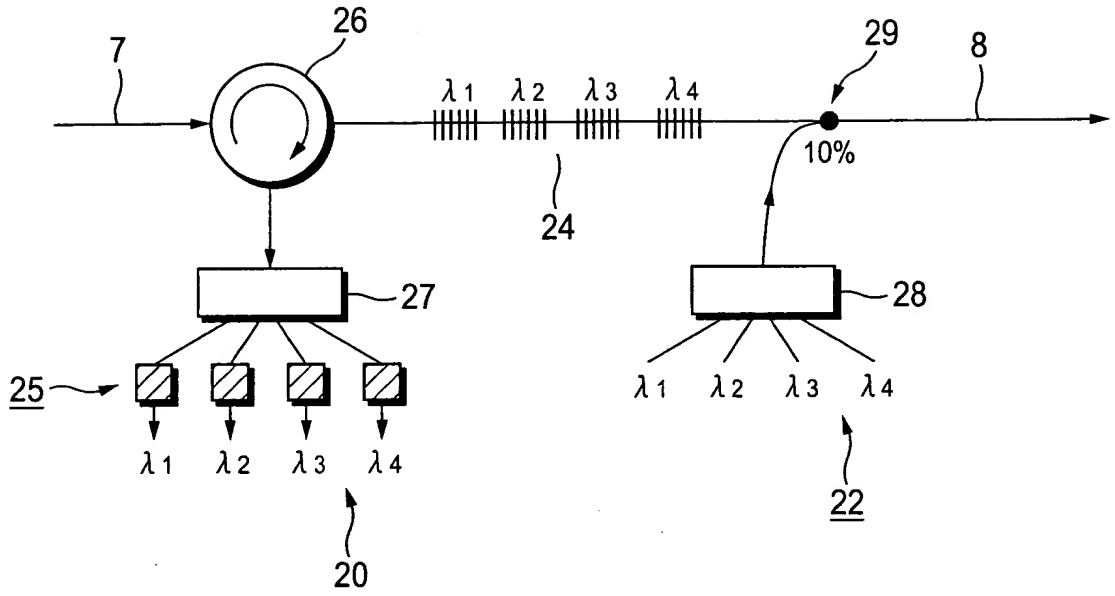
Attachments: Replacement Sheets
Annotated Sheets Showing Changes

FIG.1



(PRIOR ART)

FIG.2



(PRIOR ART)

(PRIOR ART)

FIG.3

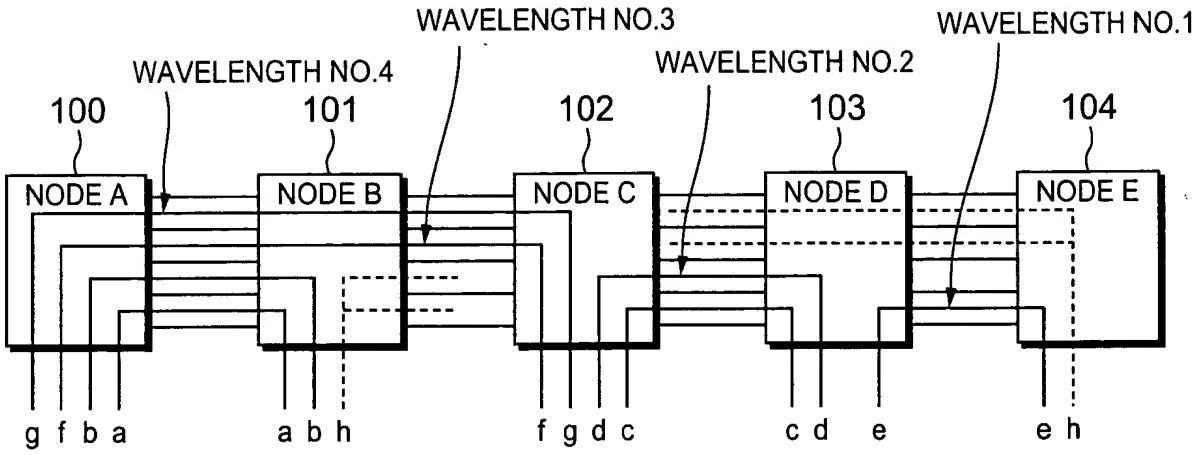


FIG.4